

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Casey, William**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-027513**Date Inspected:** 28-Apr-2012**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	Fred Von Hoff and Bernie Docent			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	SAS Tower		

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base 13 meter diaphragm, ABF welder Wai Kitlai was observed continuing to perform 3G (vertical position) Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on 250mm long X 60mm thick corner stiffener plate shop marked 356 and weld joint #W138-6. The welder was noted using SMAW with 3.2mm diameter E7018H4R electrode on the root pass and 4.0mm diameter same electrode for the fill pass implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1170. The 60mm thick corner stiffener has a 45 degree double bevel configured for a Partial Joint Penetration (PJP) per detail drawing FWT28 of FWDT-2 Field Welding Schedule drawing. The stiffener plate is being welded to the top of 60 mm shear plate on one side and to the tower skin plate on the other side. The welder was noted welding alternately from one side to the other to avoid distortion. Prior welding, the plates were preheated to more than 225°F using propylene gas torch. This QA Inspector observed QC Inspector Fred Von Hoff using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 130 and 186 amperes on the 3.2mm and 4.0mm diameter electrode respectively. During the shift, the 3G (vertical position) PJP T-joint SMAW welding was completed. The welder held the preheat using Miller Proheat 35 Heating System for three hours after welding as required.

At Tower Base 13 meter diaphragm, ABF welder Luo Xiao Hua was observed continuing to perform 3G (vertical position) Shielded Metal Arc Welding (SMAW) welding fill pass on 250mm long X 70mm thick corner stiffener

WELDING INSPECTION REPORT

(Continued Page 2 of 4)

plate shop marked 203 and weld joint #W137-3. The welder was noted using SMAW with 3.2mm diameter E7018H4R electrode on the root pass and 4.0mm diameter same electrode for the fill pass implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1170. The 70mm thick corner stiffener has a 45 degree double bevel configured for a Partial Joint Penetration (PJP) per detail drawing FWT28 of FWDT-2 Field Welding Schedule drawing. The stiffener plate is being welded to the top of 60 mm shear plate on one side and to the tower skin plate on the other side. The welder was noted welding alternately from one side to the other to avoid distortion. Prior welding, the plates were preheated to more than 225°F using propylene gas torch. This QA Inspector observed QC Inspector Fred Von Hoff using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 183 amperes on 4.0mm diameter electrode. During the shift, the 3G (vertical position) PJP T-joint SMAW welding was completed. The welder held the preheat using Miller Proheat 35 Heating System for three hours after welding as required.

At Tower Base 13 meter diaphragm, ABF welder James Zhen was observed continuing to perform 2G (horizontal position) Shielded Metal Arc Welding (SMAW) welding root pass to fill pass on 250mm long X 60mm thick corner stiffener plate shop marked 203 and weld joint #W138-3. The welder was noted using SMAW with 4.0mm diameter E7018H4R electrode on the fill pass implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1170. The 70mm thick corner stiffener has a 45 degree double bevel configured for a Partial Joint Penetration (PJP) per detail drawing FWT28 of FWDT-2 Field Welding Schedule drawing. The stiffener plate is being welded to the top of 60 mm shear plate on one side and to the tower skin plate on the other side. The welder was noted welding alternately from one side to the other to avoid distortion. Prior welding, the plates were preheated to more than 225°F using propylene gas torch. This QA Inspector observed QC Inspector Fred Von Hoff using a Fluke infra red temperature gauge to verify the preheat temperature of more than 225°F. This QA Inspector performed a verification of the welding parameters and observed 130 and 180 amperes on the 3.2mm and 4.0mm diameter electrode respectively. During the shift, the 2G (horizontal position) PJP T-joint SMAW welding was completed.

At Tower Base shear plate above 9 meter between inner West and center external diaphragms, this QA Inspector randomly observed ABF personnel Jin Pei Wang perform multiple position fillet welding on the 450mm wide X 50mm thick square shaped wall penetration doubler plate. The welder was noted fillet welding the doubler plate to the 60 mm thick shear plate using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. This QA Inspector observed ABF personnel using propylene gas torch to preheat the plates to more than 150°F prior welding. This QA Inspector observed QC Inspector Steve Mc Connell using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F and measured the welding parameters to 120 amperes. At the end of the shift, SMAW fillet welding on doubler plate mentioned above was completed.

At Tower Base 13 meter outer East external diaphragm, ABF welder Xiao Jian Wan was observed performing buttering on the one side of the PJP T-joint W102 due to excessive root as previously reported. The welder was noted buttering at overhead position using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-F1200A. At the end of the shift, buttering on the PJP T-joint W102 was still continuing and should remain Monday.

WELDING INSPECTION REPORT

(Continued Page 3 of 4)

At Tower Base bearing plate, ABF welder Richard Garcia was observed continuing to perform 3G (vertical position) Shielded Metal Arc Welding (SMAW) welding fill pass to fill pass on 60mm thick stiffener plate shop marked P157 and weld joint #W008. The welder was noted using SMAW with 3.2mm diameter E7018H4R electrode on the fill pass. The 60mm thick stiffener has a 45 degree single bevel configured for a Partial Joint Penetration (PJP). The stiffener plate is being PJP welded to the 60 mm bearing plate. Prior welding, the welded root pass was tested using Magnetic Particle Testing (MT) by ABF QC Bernie Docena and noted no relevant indication during the test. This QA performed same MT verification and noted same result. The welder resumed 3G groove welding until the end of the shift without completing the joint. The plates were preheated to more than 150°F using propylene gas torch. This QA Inspector observed QC Inspector Bernie Docena using a Fluke infra red temperature gauge to verify the preheat temperature of more than 150°F. This QA Inspector performed a verification of the welding parameters and observed 130 amperes on 3.2mm E7018H4R electrode.



Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

WELDING INSPECTION REPORT

(Continued Page 4 of 4)

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Levell, Bill

QA Reviewer